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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/692,907

10/23/2003

Ramin Rezaiifar

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QUALCOMM INCORPORATED
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EXAMINER

SEFCHECK, GREGORY B

ART UNIT

PAPER NUMBER

2616

NOTIFICATION DATE

DELIVERY MODE

06/18/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/692,907	REZAIIFAR ET AL.	
	Examiner	Art Unit	
	Gregory B. Sefcheck	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 23, 25, and 26 are objected to because of the following informalities:

Claim 23, which depends from claim 22, is objected to because it appears "first air interface" should be - - second air interface - - as claimed in claim 8, which depends from claim 7. Claims 7 and 8 are similar to claims 22 and 23 except for this one inconsistency. Clarification is requested.

Claims 25 and 26 are objected to because they are shown to be dependent from claim 20. It appears they are meant to depend from claim 21.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 7-13, 17-25, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Frid et al. (US006560239B1), hereafter Frid.

- Regarding Claim 1-3, 7-9, 11-13, 17-19, and 21-25,

Frid discloses a method and device in a wireless communication system (Abstract; meets claim 1 – method of wireless communications; claim 11,21 – wireless device).

Frid discloses a subscriber station MS 140 (Fig. 1) activates a call-waiting-type service, which serves to monitor for incoming calls from a circuit-switched network (first network associated with first air interface) while communication occurs over a packet-switched network interface (second network/interface; Fig. 3; Col. 2, lines 30-40; meets claim 1 – monitoring a first network in accordance with a first air interface; claim 2,9,12,24,25 – first network is circuit-switched, second network is packet-switched).

Referring to Fig. 3, Frid shows that a page is relayed to the MS through the packet switched network (and corresponding interface) when an incoming call intended for the MS is received from a circuit-switched network (meets claim 1 – receiving a message from a second network through the first air interface, the second network being associated with a second air interface different from the first air interface; claim 11,21 – analog circuit configured to recover information from a signal received with first air interface of first network; claim 11,21 – processor configured to detect a message from a second network associated with a second air interface different from first air interface; claim 7,17,22 – message comprises a page from the second network; claim claim 7,17,22 – communicating/recover information from second signal from the second network in response to the page in accordance with second air interface; 8,18,23 – receiving a message from the first network when communicating with second network,

the message from the first network being sent through the second air interface; claim 9,19,24 – message from first network comprises a page).

Frid shows that the MS can accept the incoming call indicated by the received page and drop (terminate) the packet-switched communication but maintain the connection (dormant) by storing negotiated parameters of the PPP (or other protocol) link so that the packet-switched communication can resume after the accepted incoming circuit-switched call is completed over the circuit-switched network/interface (Col. 2-3, lines 60-8; meets claim 3,13 – maintaining a dormant connection with the second network while monitoring the first network; claim 9,19,24 – terminating communications with the second network in response to the page from first network and communicating with first network over first air interface).

- Regarding Claim 10 and 20,

Frid discloses a method and device in a wireless communication system that covers all limitations of the parent claim.

Frid shows that enabled communication for a MS over packet and circuit-switched network requires operation over two channels (interfaces) having separate frequencies (Col. 1-2, lines 67-5; claim 10,20 – first air interface format comprises a first carrier freq and the second air interface format comprises a second, different carrier freq).

- Regarding Claim 27,

Frid discloses a method and device in a wireless communication system in which a mobile station communicating over a packet-switched network interface may receive a notification of an incoming call from a circuit switched network through the packet-switched network interface (Fig. 3; claim 27 – transmitting a signal from a first network to subscriber station in accordance with first air interface; claim 27 – transmitting a message from a second network to subscriber through the first air interface, the second network associated with a second air interface different from first interface).

4. Claims 30-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Carlsson et al. (US 20020145987A1), hereafter Carlsson.

- Regarding Claims 30 and 32,

Carlsson discloses a wireless network architecture providing mobile terminal MT 110/140 access to packet-switched and circuit-switched networks through respective access networks (Fig. 1).

Referring to Figs. 2 and 3, Carlson shows MT 110/140 communicating with the packet-switched 155 and circuit-switched 150 networks through a BS 115,120,145. Each BS includes a corresponding BSC that is not shown (Pg. 2, paragraph 23). Carlsson shows that calls and signaling to/from the MT, including circuit-switched signaling over a packet control channel or packet data service established through circuit-switched access, are tunneled between the respective access BS/BSC 115,120

when the MT is moving from one BS' cell (region) to the other (Pg. 2, paragraphs 26-27Pg. 4, paragraph 50; meets claim 30 – transmitting a signal from a circuit switched network through first BSC to a subscriber in accordance with a first air interface while the subscriber moves from a first region to a second region; claim 30 – transmitting from subscriber to second BSC a request through the first interface for an identifier to support communications with a packet-switched network associated with a second air interface different than the first interface after the subscriber moves into second region; claim 32 – transmitting a signal from a packet switched network through a BSC to a subscriber in accordance with a first air interface while the subscriber moves from a first region to a second region; claim 32 - transmitting from subscriber to the BSC a registration request through the first interface to support communications with a circuit-switched network associated with a second air interface different than the first interface after the subscriber moves into second region).

Carlsson discloses a serving MSC/VLR 205 and gateway MSC/VLR 210 for registering the location of the MT in HLR 215 and GPRS HLR 230 (Pg. 2, paragraph 26-27; claim 32 – registering the subscriber by the BSC with a MSC located in the second region).

- Regarding claim 31 and 33,

Carlsson discloses a wireless network architecture that meets all limitations of the parent claim.

Carlsson shows that a MT moving from BS 115 to 120 can receive circuit-switched service through the signaling tunnel (reflector) while the mobile is camped on a (dormant) packet channel (Pg. 2, paragraph 26; meets claim 31 – subscriber maintains a dormant connection with packet-switched network as it moves from first region to second region; claim 31 – information retrieved by second BSC from first BSC relates to maintaining dormant connection with packet-switched network through second BSC while subscriber is receiving signal from circuit-switched network in second region; claim 33 – signaling from BSC through a reflector to the MSC).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4-6, 14-16, 26, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frid in view of Carlsson.

- Regarding Claims 4-6, 14-16, 26, and 28,

Frid discloses a method and device in a wireless communication system that meets all limitations of the parent claim.

Frid does not explicitly disclose monitoring a packet-switched network and messaging through circuit-switched network access networks and interfaces in consideration of a subscriber moving from one region to another.

Carlsson discloses a wireless network architecture providing mobile terminal MT 110/140 access to packet-switched and circuit-switched networks through respective access networks (Fig. 1). Carlsson discloses integrating air interfaces of a MT for both packet and circuit switched networks by enabling the MT to tunnel signaling between the access networks, such as circuit-switched protocol signaling over a packet control channel as well as establishing a packet data service based upon the MT's serving location for circuit-switched communication (Pg. 2, paragraph 26; Pg. 4, paragraph 50; meets claim 6,16,26 – first network is packet-switched, second network is circuit-switched; claim 28 – transmission of message comprises routing from second network to a second access network to the access network).

Carlsson shows that the tunnel signaling between the BSC and MSC can be used to establish attachment to a packet data service based upon the cell (region) location of the MT (Fig. 6-8; Pg. 4, paragraph 50; meets claim 4,5,14,15 – second/first network comprises first and second regions; claim 4,5,14,15 – moving into the second region from the first region while monitoring second first/second network; claim 4,5,14,15 – sending a request for an identifier to an access network in the second region to support communications with the second network through the first/second interface).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and system of Frid by integrating network access for establishing communications with packet-switched and circuit-switched network through tunnel signaling between the BSC and MSC based upon the MT's cell location in the network, as shown by Carlsson. This would enable both packet and circuit switched communication to be simultaneously supported while providing the optimum service for the respective networks based on the location of the MT at a given time.

- Regarding Claim 29,

Frid discloses a method and device in a wireless communication system that meets all limitations of the parent claim.

Frid shows that the notification of incoming call from the circuit switched network to the MS through the packet switched network is a page (Fig. 3; meets claim 29 – message comprises a page from the second network). Frid shows that acceptance of the call following the page suspends the data communication to allow acceptance of the call through the circuit-switched network interface (Fig. 3; meets claim 29 – transmitting a second signal from the second network to the subscriber in accordance with second air interface following the page).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Burg (US 20020097710A1)
- Cyr et al. (US007031747B2)
- Hjelm et al. (US006529497B1)
- Norris et al. (US006353611B1)
- Belzile (US006253249B1)
- Holmes et al. (US006230009B1)
- Chen et al. (US006198945B1)
- Macaulay et al. (US006188886B1)
- Sicher et al. (US006112084A)
- Foladare et al. (US005982774A)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory B. Sefcheck whose telephone number is 571-272-3098. The examiner can normally be reached on Monday-Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GBS *GBS*
6-8-2007

Wing Chan
6/11/07
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SUPERVISORY PATENT EXAMINER